IN THE CLAIMS

This listing of claims replaces all prior versions, and listings, in this application.

1. - 10. (Canceled)

11. (Previously Presented) Process for the preparation of a polymer comprising monomeric units of ethylene,

an α-olefin and

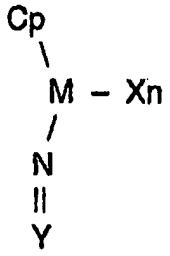
a vinyl norbornene ,

applying as a catalyst system:

a. a group 4 metal containing ~~an~~ catalyst having a single cyclopentadienyl ligand and a mono substituted nitrogen ligand, wherein said catalyst is defined by the formula I:

~~b. an aluminoxane activating compound,~~

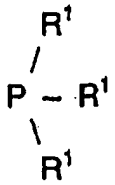
~~c. 0 - 0.20 mol per mol of the catalyst of a further activating compound,~~



Form. I.

wherein Y is selected from the group consisting of:

ai) a phosphorus substituent defined by the formula:



Form. II.

wherein each R^1 is independently selected from the group consisting of

a hydrogen atom,

a halogen atom,

C_{1-20} hydrocarbyl radicals which are unsubstituted by a halogen atom

C_{1-20} hydrocarbyl radicals which are further substituted by a halogen atom,

a C_{1-8} alkoxy radical,

a C_{6-10} aryl radical

a C_{6-10} aryloxy radical,

an amido radical, and

a silyl radical of the formula:

$$-Si-(R^2)_3 \qquad \text{Form. III.}$$

wherein each R^2 is independently selected from the group consisting of

hydrogen,

a C_{1-8} alkyl radical,

a C_{1-8} alkoxy radical,

C_{6-10} aryl radicals,

C_{6-10} aryloxy radicals, and

a germanyl radical of the formula:

$$-Ge-(R^{2'})_3 \qquad \text{Form. IV.}$$

wherein $R^{2'}$ is independently selected from the group consisting of

hydrogen,

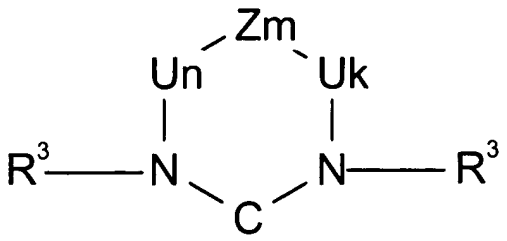
a C_{1-8} alkyl radical,

a C_{1-8} alkoxy radical,

C_{6-10} aryl radicals and,

C_{6-10} aryloxy radicals,

aii) a substituent defined by the formula:



Form. V.

wherein each of U is C R^3 R^3, C=C R^3 R^3, C=N R^3, SiR^3R^3, C=O, N R^3, P R^3, O or S,

Z is - A=A, and each A is C R^3, N or P,

each R^3 is independently selected from the group consisting of

hydrogen,

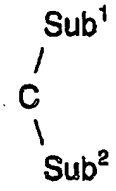
hydrocarbyl radical,

silyl radical according to form. III and

germanyl radical according to form. IV,

k, m and n have independently the value 0, 1, 2 or 3, provided that k + m + n > 0 and

aiii) a substituent defined by the formula:



Form. VI.

wherein each of Sub^1 and Sub^2 is independently selected from the group consisting of hydrocarbyls having from 1 to 20 carbon atoms, silyl groups, amido groups and phosphido groups;

Cp is a ligand selected from the group consisting of cyclopentadienyl, substituted cyclopentadienyl, indenyl, substituted indenyl, fluorenyl and substituted fluorenyl;

X is an activatable ligand and n is 1 or 2, depending upon the valence of M and the valaence of X; and

M is a group 4 metal selected from the group consisting of titanium, hafnium and zirconium, and

b. an aluminoxane activating compound,

to produce said polymer with the following properties:

[VNB] > 0.01 and

$\Delta\delta > 30 - 15*[VNB]$, provided that $\Delta\delta$ is not negative,

[VNB] is the content of vinyl norbornene in the polymer in weight % and

$\Delta\delta$ is, expressed in degrees, the difference between the phase angle δ at an angular frequency of 0.1 rad/s and the phase angle δ at an angular frequency of 100 rad/s, as measured by dynamic mechanical spectroscopy, at a temperature of 125°C.

12. (New) The process of claim 11, wherein said polymer has a $\Delta\delta$~~P~~> 35 – 15* [VNB].

13. (New) The process of claim 11, wherein said polymer has a vinyl norbornene content of between 0.1 and 4 weight %.

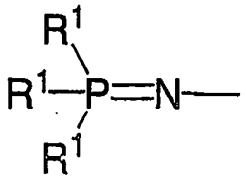
14. (New) The process of claim 11, wherein said polymer comprises at least 0.01 weight % 5-ethylene-2-norbornene.

15. (New) The process of claim 11, wherein said polymer has a $\Delta\delta > 25 - 12.5 * (Q-2)$,

wherein Q = Mw/Mn, Mw is the weight average molecular weight and Mn is the number average molecular weight.

16. (New) The process of claim 11 wherein the catalyst system further comprises 0.20 mol or less, per mol of the catalyst of a further activating compound.

17. (New) Process according to ~~of~~ claim 11, wherein the catalyst used contains a phosphinimine ligand which is covalently bonded to the metal, defined by the formula:



Form. VII

wherein each R^1 is independently selected from the group consisting of
a hydrogen atom,
a halogen atom,
C_{1-20} hydrocarbyl radicals which are unsubstituted by a halogen atom,
C_{1-20} hydrocarbyl radicals which are further substituted by a halogen atom,
a C_{1-8} alkoxy radical,
a C_{6-10} aryl radical,
a C_{6-10} aryloxy radical,
an amido radical,
a silyl radical of the formula III and
a germanyl radical of the formula IV.

18. (New) Process according to claim 17, wherein the catalyst comprises as phosphinimine ligand tri-(tertiary butyl) phosphinimine.

19. (New) Process according to claim 11, wherein the alumoxane used is of the formula: $(R^4)_2AlO(R^4AlO)_mAl(R^4)_2$ wherein each R^4 is independently selected from the group consisting of C_{1-20} hydrocarbyl radicals and m is from 0 to 50.